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MEDICAL NEWS LETTER

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HISTORICAL FUND
of the
NAVY MEDICAL DEPARTMENT

A committee has been formed with representation from the Medical Corps, Dental Corps, Medical Service Corps, Nurse Corps, and Hospital Corps for the purpose of creating a fund to be used for the collection and maintenance of items of historical interest to the Medical Department. Such items will include, but will not be limited to, portraits, memorials, etc., designed to perpetuate the memory of distinguished members of the Navy Medical Department. These memorials will be displayed in the Bureau of Medicine and Surgery and at the National Naval Medical Center. Medical Department officers, active and inactive, are invited to make small contributions to the fund. It is emphasized that all donations must be on a strictly voluntary basis. Funds received will be deposited in a Washington, D. C. bank to the credit of the Navy Medical Department Historical Fund, and will be expended only as approved by the Committee or its successor and for the objectives stated.

It is anticipated that an historical committee will be organized at each of our medical activities. If you desire to contribute, please do so through your local historical committee or send your check direct, payable to Navy Medical Department Historical Fund, and mail to:

Treasurer, N. M. D. Historical Fund
Bureau of Medicine and Surgery (Code 23)
Department of the Navy
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Letter from the Surgeon General

An open letter from Rear Admiral Bartholomew W. Hogan, Surgeon General of the U. S. Navy, was addressed to all Hospital Corpsmen, past and present, active and inactive, upon the occasion of the 59th anniversary of the founding of the Hospital Corps.

"As Surgeon General of the United States Navy, I extend my hearty congratulations and best wishes to every Hospital Corpsman upon this anniversary of the founding of the Hospital Corps!

The Hospital Corps was created by an Act of Congress on June 17, 1898 for the purpose of assisting the Medical Corps in the care of the sick and injured. This infant Corps created 59 years ago has now grown to full maturity. It assumes a full share of communal responsibility in the Medico-Military family consisting of five Corps and known collectively as the Medical Department of the Navy.

The Medical Department is justly proud of its record of accomplishments, among the many being a remarkably low mortality rate for our wounded in two world wars and the Korean conflict. A full share of credit for these accomplishments is due the Hospital Corps. Without the bravery and devotion to duty of the Hospital Corpsmen this record could not have been achieved.

The Hospital Corps is often referred to as the most decorated Corps in the Navy. In time of war the bravery of Hospital Corpsmen is legendary. In time of peace their long hours devoted to care of the sick and injured in hospitals and on board ships is equally meritorious, though less spectacular.

On this anniversary of the Hospital Corps, I wish to call attention to this less glamorous phase of the duties performed by Hospital Corpsmen and to commend them for their continuing devotion to duty. On behalf of the Medical Department of the Navy, I say to each Hospital Corpsman "Well done. Well done, indeed!"

(s) B. W. HOGAN

* * * * *

Anesthesia in the Patient with Myasthenia Gravis

Myasthenia gravis is a chronic disease of uncertain etiology, characterized by its tendency to spontaneous remission and exacerbation. Although frequently stated to be most common in white females in the third decade of life, its occurrence in the aged and children is not uncommon. Cranial nerve involvement is almost always present, especially as manifested by ocular ptosis, dysphagia, and ready fatigue of the masseters. Physical examination reveals little evidence of atrophy or reflex change. A return of normal muscle strength following rest with the onset of muscular weakness on exercise is the most reliable feature of the clinical history. In the more serious cases, muscle groups most seriously involved may not regain strength, even after prolonged rest.

Diagnosis of myasthenia gravis in the patient who presents classical symptoms is not difficult. It is in the borderline case which, if unrecognized, can give rise to such grave anesthetic complications that physicians must rely most heavily on chemical tests. Shortly after Walker described the effects of neostigmine in the myasthenic, Viets and Schway utilized it as a confirmatory diagnostic test. Muscle strength improves within five minutes after injecting 1.5 mg. of neostigmine and 0.4 to 0.6 mg. of atropine, intramuscularly.

A number of drugs which will aggravate the conduction defect have also been used: namely, quinine, d-tubocurarine, and gallamine. Recently, Osserman and Kaplan have studied the use of edrophonium (Tensilon) chloride with encouraging results; the lack of side effects is especially desirable. Two milligrams are given intravenously and if improvement in muscle strength without fasciculation is not noted within one minute, a second dose of 8 mg. is given. False positives have not been reported.

In addition to the routine history, physical, and complete blood count, there are certain ancillary investigations which may decrease the risk for the patient. Serum potassium determination should be done in all cases of questionable electrolyte balance because hypokalemia aggravates myasthenia. A chest roentgenogram will demonstrate any abnormal preoperative pulmonary pathology and also may be used for comparison with postoperative films.

In view of recent pathological studies by Mendelow and Jenkins demonstrating cardiac lesions in twelve autopsy cases, it would be well to have a preoperative electrocardiogram and cardiac evaluation. These workers have demonstrated areas of myocardial necrosis with secondary inflammatory reaction being most marked in the cases associated with thymoma.

In the past, this group of physicians has felt strongly about preoperative vital capacity determinations to serve as a reference standard, although the quadrant plot of 0.5 second expiratory capacity/total vital capacity against percent predicted total vital capacity as recently advocated by Miller,

Wu, and Johnson, is probably more accurate. Just as one can demonstrate decreasing tidal volumes in the polio patient approaching respiratory crisis, one can predict and prevent difficulties in the myasthenic.

The presence of respiratory infection of even minor degree contraindicates all but the most urgent surgery. Should intervention have to be performed in the face of respiratory infection, the use of broad spectrum antibiotics is advised.

The myasthenic coming to elective surgery should be carefully regulated on oral neostigmine for 10 days or 2 weeks until the optimum dosage is reached. Fortunately, the advent of the edrophonium (Tensilon) test has simplified regulation. Osserman has classified the types of response to the intravenous injection of edrophonium as adequate, myasthenic, and cholinergic. In the myasthenic reaction, there is evidence of increased muscle strength without fasciculations or side reactions. A cholinergic response is characterized by decrease of strength as noted by examiner and patient: side reactions in the form of lacrimation, diaphoresis, salivation, abdominal cramps, nausea, vomiting, and diarrhea which may vary from mild to severe; and fasciculations which are usually, but not always, present. The adequate response is the same as seen when edrophonium is given to a normal; there are fasciculations, mild side reactions, and no change in muscle strength.

The test can be done serially at hourly intervals in the severe or brittle myasthenic; however, in the average case, a single test 2 hours after the previous dose of neostigmine is adequate. This test is certainly of great value in the management of respiratory crisis in which it is possible to rapidly determine whether the respiratory insufficiency is due to myasthenia or a cholinergic crisis.

Premedication should be kept at a minimum, avoiding morphine and barbiturates because of an apparently lowered tolerance. Demerol in half the usual dose should be adequate. Females are best operated on postmenstrually as their myasthenia shows cyclic variation.

The selection of anesthetic agents and techniques for the myasthenic revolves around the prevention of prolonged respiratory depression and the maintenance of adequate alveolar ventilation throughout the procedure.

Procedures below the umbilicus can readily be carried out under spinal analgesia with little danger to the patient. However, spinal analgesias should not be given to levels which might prevent adequate pulmonary ventilation. Although Harvey has demonstrated the neuromuscular blocking properties of procaine, the authors have had no untoward effects when procaine is used in moderate doses for regional block.

The choice of agents for general anesthesia is unsettled; however, it would seem advisable in light of Secher's work demonstrating neuromuscular blockade with ether to avoid this agent entirely or to use it sparingly. While there are cases that have been managed with thiobarbiturates, the number

of case reports of prolonged apnea or respiratory depression following their administration to the myasthenic speaks against their use as does their slow rate of dissipation from the body. Of the inhalation agents, cyclopropane stands as the agent of choice in that it is rapidly eliminated and also capable of producing all levels of anesthesia without supplementation. Almost any procedure can be satisfactorily carried out with endotracheal cyclopropane and oxygen in the absence of relaxants. Should relaxants become necessary, all the nondepolarizing group are contraindicated and succinylcholine is the drug of choice. When administering succinylcholine to the myasthenic, it is well to bear in mind that possibility of two-stage hydrolysis and the possible accumulation of succinylmonocholine which is slowly dissipated and has weak ability to produce neuromuscular blockade.

Throughout the operative procedure and postoperative period, rigid attention to ventilation, the maintenance of a patent airway, and the removal of secretions are paramount to patient safety. Aspiration bronchoscopy or tracheostomy and the use of mechanical ventilating devices should be employed without hesitation if there is difficulty in removing secretions or ventilation is inadequate. Serial determinations of pulmonary function and the use of the edrophonium test in regulating neostigmine dosage are advocated. (Mathews, W. A., Derrick, W. S., *Anesthesia in the Patient with Myasthenia Gravis: Anesthesiology*, 18: 443-451, May-June 1957)

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Direct Vision Repair of Intracardiac Defects

Direct vision intracardiac surgery utilizing a pump-oxygenator for the repair of congenital cardiac anomalies has become an accepted surgical technique and is being utilized by an increasing number of cardiac surgeons. Many pump-oxygenator systems have been devised. Probably the most widely used are various modifications of the bubble oxygenator of DeWall, popularized by Lillehei and Varco. Kirklin has utilized the Gibbon type pump-oxygenator satisfactorily in a large number of clinical cases; in the present series a rotating disc reservoir-oxygenator was used. It has become apparent that the acquisition of a satisfactory heart-lung machine fills only one basic requirement for successful direct vision intracardiac surgery. The others involve extensive experience in perfusion methods, perfection of intracardiac surgical techniques, and appreciation of associated clinical problems in the immediate postoperative period.

This report is based on experience with 45 patients operated on between January 1 and November 1, 1956. The patients were between 1-1/2 and 40 years, weighing from 14-1/2 to 116 pounds. The indications for surgery in each case were based on such clinical findings as limitations in growth and

physical activity, changes in cardiac status shown by electrocardiogram and roentgenogram, or on markedly elevated intracardiac pressure.

The mortality in the 45 cases was 27%, 33 of the 45 patients surviving surgery. This mortality may be corrected to 23.2%, however, if the 2 cases of transposition of the great vessels are excluded from the series, since operation was performed in spite of a known high operative risk in order to test a new surgical principle in their repair. The operative mortality in patients with only a ventricular septal defect was 19%, 13 of the 16 patients surviving. There was one death in 8 patients undergoing repair of an uncomplicated atrial septal defect and no deaths in the 6 patients with uncomplicated valvular pulmonic stenosis.

The records of the 12 patients who died have been studied carefully in order to pinpoint a specific cause of death. Two died postoperatively while still in the operating room after multiple episodes of cardiac arrest. In one case, the heart was restarted nine times before final failure. The other patient had a conduction defect resulting from surgery which undoubtedly contributed to the inability of the heart to take over postoperatively. Eight of the other 9 patients died within the first 24 postoperative hours—most of them starting to have trouble in the first 12 hours. It is difficult to assign a specific cause of death in each instance. With one exception, all of the deaths occurred in poor risk patients or in those in whom the anatomy of the defect presented difficult problems related to proper correction. No deaths can be ascribed to the pump-oxygenator per se. Pulmonary complications were by far the most frequent postoperative problem. Two patients required emergency tracheotomies in order to aspirate the excessive pulmonary secretions; in one patient with a preoperative atelectasis, and with pulmonary edema noted at surgery, the tracheotomy was done prophylactically. Furthermore, the only positive finding at postmortem in 3 of the children who died was pulmonary edema with or without associated atelectasis. One child developed a left chylothorax and another thrombophlebitis. There was one episode of successfully treated cardiac arrest occurring in the recovery room in a child with an uncorrectable defect. The same child later developed a cerebral thrombosis with a residual paralysis.

It is believed there were no more postoperative complications in these cases in which the pump-oxygenator was used than might occur in patients of similar risk if closed cardiac techniques were employed. It is believed, however, that the trans-sternal incision probably is not as well tolerated as the usual unilateral thoracotomy incision, and that pulmonary complications, therefore, have to be guarded against more stringently.

All but one child surviving surgery are living and well with the exception of the child who developed the cerebral embolus one month postoperatively. Surgery has been done too recently in the majority of these cases to discuss results in terms of clinical improvement or physiologic improvement as evaluated by recatheterization studies.

Little doubt exists that the future of cardiac surgery lies in the further development of safe direct vision techniques. The advantages of open techniques are obvious: (1) easy visualization of all valves, septa, and chambers; (2) complete correction of existing defects when possible; (3) identification and repair of associated defects previously undiagnosed. For instance, in two patients operated on for valvular pulmonic stenosis, associated ventricular septal defects were found and corrected; in one patient there was also an unsuspected infundibular stenosis.

Where there has been an opportunity to compare open techniques with previously tried closed techniques, the former have proved eminently more satisfactory from all standpoints. Two atrial septal defects incompletely closed by a closed technique have now been completely closed by open surgery. With one exception, good to fair risk patients with anatomic defects easy to correct have done well; it has been the poor risk patient or the one with a complicated defect that has not survived surgery. This observation perhaps indicates that the time is approaching when atrial septal defects and ventricular septal defects will be viewed as a patent ductus arteriosus is viewed at the present time; that is, when the optimal time for surgery is reached, it is carried out electively rather than waiting for the individual to develop significant symptoms. This accomplishment should be the ultimate goal of all cardiac surgeons.

Emphasis is placed on the use of extensive physiologic studies before, during, and after the period of cardiac by-pass, for it has been through the analysis of these studies that techniques in direct vision surgery are continually being refined. Again, it is stressed that a satisfactory pump-oxygenator is only part of the formula for success. With such machines becoming available in increasing numbers, the rest consists of extensive teamwork in the preoperative techniques, and intensive postoperative care and observation, especially in the first 24 hours. (Cross, F. S., Kay, E. B., Direct Vision Repair of Intracardiac Defects Utilizing a Rotating Disc Reservoir-Oxygenator: Surg. Gynec. & Obst., 104: 711-716, June 1957)

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Joint Paracentesis from an Anatomic Point of View - II

In the first article of this series, the principles for selecting sites for paracentesis were stated and sites were recommended for the shoulder, elbow, wrist, and hand articulations. The present report deals with the results of anatomic studies on the articulations of the inferior extremity.

According to the principles developed in the first article, the following considerations have been taken into account in selecting injection sites for the inferior extremity:

1. The site should be as far removed as possible from tendons, large nerves, or blood vessels.

2. A palpable bony landmark should be available in the immediate vicinity of the injection site.

3. If the landmark is not easily palpable when the joint is in the best position for injection, the joint may be palpated in one position and subsequently moved to the position for injection.

4. Methods, such as distraction or positioning which will enlarge the target area (the joint cavity) should be utilized.

5. Positioning should be such as to stretch the part of the capsule and any supporting ligaments that might be penetrated by the needle tip.

6. The direction of penetration should be such as to minimize the danger of scoring the articular cartilages.

From an anatomic study of the joints of the inferior extremity, the following sites were selected for joint paracentesis:

1. For the hip: a lateral approach immediately superior to the middle of the greater trochanter with the leg adducted and medially rotated slightly.

2. For the knee: an anterior approach immediately inferior to the apex of the patella with the knee flexed to 90°.

3. For the talotibial joint: an anterior approach immediately inferior to the medial malleolar sulcus with the foot plantar flexed.

4. For the talonavicular joint: a dorsal approach immediately distal to the talar head with the foot plantar flexed.

5. For the first tarsometatarsal joint: a medial approach immediately proximal to the base of the first metatarsal.

6. For the fifth tarsometatarsal joint: a lateral approach immediately proximal to the tubercle and dorsal to the peroneus brevis tendon.

7. For the metatarsophalangeal joints and the interphalangeal joints: a dorsal approach distal to the head of the more proximal bone, either medial or lateral, to the extensor tendons and aided by flexion and distraction of the digit.

The merits of these approaches are discussed in relation to those of others. (Miller, J. A., Joint Paracentesis from an Anatomic Point of View. II. Hip, Knee, Ankle, and Foot: Surgery, 41: 999-1010, June 1957)

(See News Letter, Volume 29, Number 1, page 19)

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Intracranial Tumors in Infancy and Childhood

Two-thirds of the intracranial tumors which give clinical signs before puberty arise below the tentorium. In adults, the reverse is true. The pathologic types which tend to occur in set locations within the central nervous system do not differ with age. Meningiomas are rare in childhood and adenomas of the hypophysis are almost unknown. The primary neoplasms which occur in childhood can be localized as follows: below

the tentorium, (1) the cerebellar hemispheres, (2) the cerebellar vermis, (3) the cavity of the fourth ventricle, and (4) the pons and medulla; above the tentorium, (5) the optic nerves and chiasm, (6) the hypothalamus, (7) the thalamus, (8) the pineal body and quadrigeminal plate, and (9) the cerebral hemispheres.

The most common symptom of an intracranial tumor in a child is vomiting. The most common sign is a cracked tone on percussion of the skull. Tumors of the pons and some tumors of the cavity of the fourth ventricle may be associated with vomiting, but without evidence of increased intracranial pressure. Because a child's skull can enlarge easily to relieve rising pressure, headache is not a common symptom. The majority of tumors which appear before puberty occur in the posterior fossa and the most common sign of such tumors is unsteadiness in walking. Children who vomit and are unsteady without the indications of an acute feverish illness or the obvious after-effects of a severe head injury usually have an intracranial neoplasm below the tentorium. With such a symptom and such a sign, if percussion of the skull gives cracked resonance, the diagnosis of intracranial tumor may be made easily and quickly. The usual triad which is given for the presence of an intracranial tumor is headache, vomiting, and papilledema. In children, however, the proper triad is vomiting, unsteadiness, and a positive Macewen's sign.

Because most tumors arise in the posterior fossa, convulsions are not common. The association of frequent major convulsions with increased intracranial pressure and ataxia of the trunk is more often evidence of a toxic encephalopathy or of acute meningoencephalitis than of a tumor of the posterior fossa. Even lateralizing or localizing convulsions in a child do not have the connotation of such attacks in adults. Many children have their first few convulsions as lateralized attacks and then have full major convulsions with movement of all four limbs. A one-sided attack, whether this is the first seizure or is frequently repeated, is not evidence of an expanding lesion in the opposite hemisphere; it is evidence of an anatomic lesion in the appropriate region, but does not indicate that this lesion is increasing in size. The convulsion which has a true Jacksonian march from the periphery to the center of a limb is usually evidence of an anatomic and expanding lesion in a child as in an adult.

Although not well understood, it has long been known that most children who have intracranial tumors are quiet and well behaved and remarkably mature in all their actions.

To distinguish accurately a primary intracranial tumor from other causes of increased intracranial pressure and defect of local function is complicated and difficult, but depends on a few general principles. Children are so prone to acquire infections of the middle ear and respiratory tract that the occurrence of such an illness will not distinguish an abscess from a tumor. A child who has an intracranial abscess, however, looks pale and ill while a child with a primary tumor is often remarkably robust.

Lead encephalopathy may produce all the signs of a tumor of the cerebellar vermis with truncal ataxia, papilledema, and separation of the sutures of the skull, but major convulsions which are so common with lead poisoning are almost never present with a tumor of the posterior fossa. Basophilic stippling of the red cells of the peripheral blood may be absent with lead intoxication, but roentgenograms almost always reveal deposits of metal at the growing ends of the long bones. Proper interpretation of such lines of increased density is difficult, however, and the only certain test for lead poisoning is chemical or spectrographic proof of abnormal amounts of lead in the peripheral blood.

The clinical picture of tuberculous meningitis is not often confused with that of a primary tumor, but such infection may produce papilledema and separation of the sutures of the skull.

Acute non-septic meningoencephalitis may have for a time unilateral signs of hemiplegia with hemianopsia. The meningeal component usually gives the clue to the diagnosis, but some primary tumors do have an associated cellular reaction in the spinal fluid. This is more common, however, with tumors below the tentorium.

Because most tumors are in the posterior fossa, ventriculography and angiography are of less specific value in children than in adults. Both may demonstrate blocking of the aqueduct, but only with the highest technical success is localization possible in the posterior fossa. Since present techniques of electroencephalography record electrical discharges from the superficial layers of the cortex, their frequent failure to demonstrate or to localize intracranial tumors in children is not unexpected.

The only type of intracranial tumor in childhood with which complete recovery and freedom from recurrence may be expected is the astrocytoma of the cerebellar hemisphere. Lindau's disease with the vascular tumor in the same region of the cerebellum seldom gives clinical signs before puberty. Other posterior fossa tumors, either from their pathologic structure or their anatomic situation, cannot be removed completely. Meningiomas, astrocytomas or oligodendrogliomas of the cerebral hemispheres are open to possible removal, but they are frequently associated with contralateral hemiparesis which is permanent and with lateralized major convulsions which are most intractable. With the exception of the rare cysts of the third ventricle, other neoplasms above the tentorium cannot be removed with restoration of normal function. Surgical relief and control of advancing intracranial pressure and radiation of the tumor is all that is possible with most of the intracranial tumors of childhood, but this frequently gives great relief and remarkable restoration of function. The prognosis for useful, although temporary, improvement and for life itself is controlled by at least two obvious variables, anatomic position and pathologic structure. (Buchanan, D., *Intracranial Tumors in Infancy and Childhood: Am. J. Surg.*, 93: 935-936, June 1957)

Apico-Osteoplasty

Since the advent of antimicrobial therapy, resectional surgery for pulmonary tuberculosis has become more popular. With increased experience, it has become apparent that space reducing procedures are often necessary following surgical removal of tuberculous cavitary or nodose disease. The ideal procedure following pulmonary resection should fulfill the following requirements: (1) provision for complete obliteration of the vacant pleural cavity; (2) no need for insertion of foreign bodies; (3) effected with ease and rapidity so as to lessen the operating time, tissue trauma, and blood loss; (4) absence of paradoxical motion; and (5) a good cosmetic result.

Although various methods for handling the troublesome pleural space have been employed, none of these have fulfilled all the aforementioned requirements. A new technique, apico-osteoplasty, was, therefore, developed by one of the authors and applied clinically. The operation consists in fashioning an osseo-muscular plate or "hard portion" with the second and third ribs and associated intercostal muscles. This is followed by extrafascial apicolysis with plication at the selected level.

The first apico-osteoplasty of the type described was performed in September 1955; since then, 17 cases have been completed. The ages ranged from 21 to 53 years. Nine were classified by 1955 National Tuberculosis Association standards as having advanced disease and 8 moderately advanced. Preoperatively, 13 cases were sputum positive and resistant to the antimicrobials while 4 were sputum negative. Postoperatively, 13 became sputum negative, whereas 4 still remained positive on smear and culture. Contralateral tuberculosis involvement, however, was present in the latter 4 cases.

Because many of the resections for pulmonary tuberculosis performed at National Jewish Hospital at Denver have been done on cases in which the remaining lung tissues demonstrated an inability to expand, space reducing procedures have frequently been necessary.

In the authors' experience, the apico-osteoplasty has proved to be an excellent procedure. Unlike the classical thoracoplasty with apicolysis, this procedure does not create any significant additional trauma or blood loss; nor is it accompanied by the incidence of infections, fistula formation, or the other hazards associated with extraperiosteal plombage. (Goldberg, M., Heitzman, G., Kass, I., Grow, J. B., Apico-Osteoplasty - A Modified Thoracoplasty Technique: Dis. Chest, XXXI, 696-703, June 1957)

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Biologic False Positive Reactions

The occurrence of biologic false positive (BFP) reactions in standard tests for syphilis (STS) has been well established and recently studied in certain diseases employing the new techniques and antigens. Obviously,

latent syphilis cases are the type most difficult to differentiate clinically from individuals presenting such reactions. When dealing with the "chronic" BFP reactor, this problem becomes nearly insoluble unless additional laboratory data are available. Fortunately, it is now possible to obtain such information by utilization of the treponemal immobilization (TPI) test.

Use of the TPI test as an aid in the diagnosis of latent syphilis is well founded, but has raised questions relative to the proportion of BFP reactions occurring with any given test and in different population groups. Perusal of reports by other workers reveals that the standard Kahn test was employed in the selection of a large majority of the cases studied. For this reason, results on cases selected by means of other standard tests (VDRL and cardiolipin Kolmer) are presented. These are compared with the clinical findings and with the TPI test.

Cases were accepted from anywhere in the U. S. Armed Forces in Europe and represent a cross section of such cases in this rather heterogeneous group. Criteria for selection were: (1) absence of any history of syphilis, (2) no history of treatment for syphilis, (3) absence of any signs or symptoms of syphilis, (4) recent positive or doubtful STS reactions on three different specimens drawn at least a week apart, (5) no recent penicillin therapy for other disease, and (6) submission of a sterile serum specimen.

Histories accompanied the serum from each case stating the diagnostic problem. The presence of any known causes of "acute" BFP reactions was indicated. Cerebrospinal fluid examinations had been performed with negative results on 51 of the 183 cases studied, thus greatly reducing the likelihood of asymptomatic neurosyphilis in this portion of the series.

In attempting to determine the proportion of STS reactions which might be false, the main difficulty was the lack of a standard of reference which would permit the differentiation of true latent syphilis. The TPI test has now been established as a dependable means of attaining this. Both the specificity and the sensitivity have been shown to be quite high. Provided that no early or treated cases of syphilis are included, the TPI procedure yields very few doubtful reactions and, therefore, provides a clear-cut differentiation. In the presence of positive or doubtful STS where all clinical evidence and history referable to syphilis are absent, the TPI negative cases may be assumed to be BFP reactors to the STS and the positives to be cases of latent syphilis. It is not implied that such a procedure, even though statistically valid, should be applied in quite the same manner to individual case diagnosis. For such purposes, laboratory tests may be depended upon as diagnostic aids only in the presence of prescribed clinical circumstances.

In view of the foregoing, it appears that the majority of those "sero-positive" cases yielding negative TPI test results were false positive reactors to the STS when cardiolipin antigen was employed. It is unlikely that an appreciable proportion of latent syphilis cases were overlooked because

all diagnosed cases of late or latent syphilis tested during this period in this laboratory yielded positive results and, furthermore, positive control sera supplied by the serologic standardization section of the World Health Organization yielded reproducible results indicating high test sensitivity.

The fact that only three of the TPI negative patients had clinically recognizable disease and that all were reactive on several occasions to the STS, led the authors to conclude that a large majority of false positive cases observed were "chronic" BFP reactors.

A table shows that sera reactive to the microflocculation test yielded a higher proportion of false results (19%) than did those which were reactive to the complement fixation procedure (10%). TPI results of sera negative to the CF test show that much of the apparent difference may be due to low sensitivity of the complement fixation test against those sera. Thus, the CF cannot be recommended for sole use as an exclusion procedure lest this result in failure to detect about 15% of latent syphilis.

The careful selection of cases and the requirement for repeated STS screening, in addition to the other considerations discussed, could be expected to eliminate practically all but "chronic" BFP reactors and latent syphilitics. This may have contributed to the lower incidence of BFP reactions reported in this article as compared with those reported by Moore, 45.3%; Harrell, 58.4%; Nelson, 42.5%; and Miller, 55.6%. However, it is more likely that the main reason for the difference between the authors' findings and those of others is the use of the cardiolipin microflocculation test as a screening procedure in the selection of these cases. Previously, it has been shown that the standard Kahn test is more likely to give false or oversensitive reactions than is the VDRL procedure. (Chorpenning, F. W., Beers, D. B., Biologic False Positive Reactions in Serologic Tests for Syphilis - Comparison of Standard Tests for Syphilis with the Treponemal Immobilization Test: Laboratory and Clinical Medicine, 49: 928-932, June 1957)

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Emergency Care of Childhood Skeletal Trauma

The Committee on Accident Prevention of the American Academy of Pediatrics, in cooperation with the Surgical Section of the same organization, has prepared statements to cover the emergency management of childhood skeletal trauma and burns. Both of these statements are endorsed by the Committee on Trauma of the American College of Surgeons and have been approved by the Federal Civil Defense Administration.

1. Evaluate and splint where they lie before moving. Do not attempt reduction.

2. Move cervical injuries face up on a rigid support with manual traction applied gently by cupping chin at the time of moving. Sand

bags on either side of neck to prevent turning, if possible.

3. Spine injuries should not be flexed in transportation.

4. Lower leg injuries transport in pillow strapped with belt.

5. Upper leg injuries transport with both legs and trunk bound to board without circulatory interference.

6. Lower arm injuries transport with splint such as rolled newspaper, gentle compression wrapping, and sling.

7. Upper arm can be bound to chest with lower arm supporting in sling.

8. Open injuries or open wounds cover with sterile dressing, do not dust with antibiotic, but systemic antibiotic is useful. Do not attempt to retract bone back under skin. Get to surgical care promptly.

9. Do not cover distal tips of extremities if it can be avoided, thus allowing a circulation check to be made from time to time.

Emergency Care of Burns

1. Burns are due to thermal agents (scalds or fire); chemical agents (battery acid or lye); radiation (sunburn or nuclear); and electrical energy.

2. Even small burns may be followed by infection, lockjaw, excessive scarring and disfigurement. Large burns may represent an immediate threat to life from shock. Arrest of the circulation and respiration may occur following electrocution.

3. Flames should be smothered; children who have been scalded should have their clothing removed immediately; chemical burns (except phosphorus) should be washed with large quantities of running water. Chemical burns of the eye should be flushed with saline solution or water. Patients should be removed from source of radiant energy.

4. Fresh burns are relatively clean. They should be covered by a clean cloth immediately and should not be uncovered until the patient is delivered to a hospital emergency room or a doctor's office. Such covering should be loosely applied without constriction.

5. Ointments, greases, powders, et cetera, should not be used in the emergency treatment of burns. Leave this management to the physician who will care for the patient.

6. Shock may be combated by keeping the patient flat, reassuring him, and keeping him warm during transportation to the hospital.

7. Pain is usually not a serious problem in the emergency treatment of a burn and drugs for pain should not be administered except by the physician who will care for the burn.

8. Patients with burns of the face, hands, feet, or areas surrounding a joint as well as any burn equivalent to more than 5% of the body surface should be hospitalized after emergency treatment.

9. Electrical burns accompanied by electrocution and failure of respiration and circulation should receive artificial respiration for an indefinite period and until ordered to stop by a physician.

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Suicide in Children and Adolescents

Suicide ranks fifth in frequency as a cause of death among young people 15 to 19 years of age. It is surpassed in this age group only by accidents, malignant neoplasms, rheumatic heart disease, and homicide (principally in Negro children). In 1954, the last year in the United States for which figures are available, 261 adolescents lost their lives in this way—more than the number that died from renal disease, pneumonia, tuberculosis, leukemia, or poliomyelitis. Suicide accounted for 2.5% of all deaths in this age group in 1954 in the United States.

In a recent report from Yale for 1925 - 1955, suicide was the second most frequent cause of death among students. It accounted for 12% of all deaths. Moreover, suicide was the only major cause for which more deaths occurred than was expected, the general death rate among Yale students being considerably lower than in the general population. In an earlier study, 1925 - 1935, made in various colleges, suicide was the third most frequent cause of death.

Even in the 10- to 14-year old children, the death rate from suicide is not inconsiderable. Each year, from 35 to 60 children take their own lives. Suicide accounted for 0.59% of all deaths in this age range in 1954 in the United States. The number of deaths is comparable in magnitude to the number of children dying from appendicitis, tuberculosis, homicide, diabetes, or meningococcus disease.

It is important to keep in mind that the number of deaths from suicide is probably greater than is given in the mortality data. Ordinarily, every effort is made to conceal a suicide death and to attribute it to accident or other cause, thereby shielding the parents from the shame and guilt feelings associated with a self-inflicted death. Some of the motor vehicle accidents in young people due to reckless driving may have in them a suicidal component. Neavles and Winkour, in a psychiatric study of more than 30 hot-rodders, concluded that there is a great self-destructive element in their behavior. "These boys," they wrote, "gamble with their lives."

In vital statistics reports, deaths from suicide and homicide are customarily included under "accidents" along with motor vehicle accidents, mishaps with firearms, drownings, and so on. In suicide and homicide, however, there is an element of conscious intention which is not present in other "accidents." For this reason, it seems justifiable to consider them separately from other accidental deaths.

As the over all death rate in adolescents has fallen owing principally to control of the infectious diseases, suicide has emerged as one of the leading causes of death in teen-agers. Death is always distressing to relatives and friends who remain behind, but it is especially so in the case of suicide, for here grief is accompanied by shame and feelings of guilt and inadequacy. Most parents feel that they are in some way responsible for the unhappiness which expressed itself in this extreme fashion.

Fortunately, the trend in the suicide rate of teen-agers in the United States is downward, especially among girls. The rate here as in England and Wales is well below the median.

The wide fluctuation in the suicide rate from country to country means that factors outside the individual exert a potent influence on the frequency of suicide. What these factors are can only be conjectures.

It is likely that the rigidity of the "Prussian" type of society which is not limited to Germany is an important consideration. In such a society, where strict rules govern minute details of behavior, transgressions will necessarily be frequent. Compliance is based on fear of censure and punishment. There are too few excuses or extenuating circumstances for one who errs; there is too little consideration for human imperfection. Failure to live up to parental expectations at home or at school is regarded as willful misbehavior. Under these circumstances, a reaction with strong guilt feelings is natural and this, in turn, expresses itself in a desire for self punishment.

Important, too, is the social attitude toward the self-destructive act. Where suicide is regarded—to some extent at least—as an honorable and noble way to die, the act will be more frequent than in countries like England and the United States where suicide is looked down upon as cowardly behavior or as a sign of mental aberration. Social acceptability is a prominent factor in the suicide rate in certain parts of Asia.

Without any explanation are the seasonal fluctuations in the suicide rate. It is true that the high rates during the spring months coincide with "examination time" in teen-agers, but this fails to explain the similar peak in adult rates.

The individual factors within a society which lead to suicide vary according to age. In young children, fear of punishment, remorse, shame, guilt feelings, and anger are prominent factors. Most of the reported cases have come from unsatisfactory homes.

In the teen-ager, similar factors operate and, in addition, feelings of inadequacy, feelings of exclusion, and problems of sex adjustment. School problems are taken more seriously by the teen-ager than by younger children. Interesting are the cases described by Stearns and others of hanging in seemingly well-adjusted boys. It is worth noting that mental illness is regarded as a minor cause of suicide, accounting for only about 10% of the cases.

The sole approach to the suicide problem lies in recognizing beforehand the susceptible individuals and in their proper management. Too often, suicidal threats and even minor attempts are looked upon as bids for attention and sympathy—which they usually are—and the unhappy adolescent is subjected to teasing and ridicule. Unfortunately, tragedy follows in a certain number of cases.

There are a few warning signs that should make the physician suspect impending suicide. Most prominent is depression often associated with insomnia, instability, and violent temper outbursts. In some instances, suicide follows a recent surgical operation or a painful long drawn out illness and, last, the type of suicide note may give helpful information.

Sifneos and associates emphasize the value of hospital care as a preventive measure. The hospital helps by removing the person from the acute situation which is troubling him. It provides a dramatic demonstration that his concerns, practical and psychological, are being seriously considered and that something is being done for him. Physical ailments are attended to; and, finally, psychiatric treatment is provided.

An interesting approach to the suicide problem suggested by Watney is the creation of a society on similar lines to Alcoholics Anonymous. This would be a permanent service which would be prepared to accept calls from any persons seeking help. It might be possible to prevent suicide in some instances if a sympathetic listener could be found who would give assistance and encouragement. The persons chosen for this work would, preferably, be ones who had themselves overcome a similar problem. (Bakwin, H., Suicide in Children and Adolescents: J. Pediat., 50: 749-768, June 1957)

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Paraldehyde - USP

Correspondence has been received that indicates certain complications have been encountered when using Paraldehyde, USP.

In one particular case history, the Paraldehyde was given orally, approximately six (6) cubic centimeters of a solution diluted in two (2) ounces of water. Within a few minutes after drinking the mixture the patient complained of a burning sensation of the oropharyngeal and esophageal areas. The burning sensation progressed during the following hours while he developed progressive dysphagia, aphonia, and respiratory difficulty. Physical examination six (6) hours after ingestion of the solution revealed erythema and edema of the lips, uvula, and oropharynx. His distress increased so that it became imperative to transfer the patient to the hospital. Hospital treatment included a tracheotomy.

The preceding case history illustrates the inherent dangers in a common and generally safe hypnotic. The causative factor was attributed

to the high acetic content of the Paraldehyde resulting from long storage in a partially filled bottle.

In order to prevent recurrences of a similar case, personnel are reminded that Paraldehyde is subject to deterioration and conversion to a dangerous concentration of acetic acid which can cause death. Because Paraldehyde is a "long-term storage item" it is of the utmost importance that the contents of each bottle be scrutinized carefully prior to administration to ascertain whether the solution is suitable for the intended purpose.

In view of the comments noted above, it is recommended that any Paraldehyde container that has been opened for more than a few weeks be surveyed and destroyed in accordance with the instructions contained in Art. 25-21 ManMed. It is further suggested that any on-hand stocks of Paraldehyde be preserved in well-fitting tight and light-resistant containers which will hold not more than 120 gm., preferably at a temperature not above 30° C. The restriction of 120 gm. applies only to those containers from which prescriptions are filled. (ProfDiv, BuMed)

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The International Society of Internal Medicine

The International Society of Internal Medicine—the only international society embracing all aspects of internal medicine—was organized in 1948, largely at the instigation of Professor Nanna Swartz of Stockholm, the physician to the King of Sweden. Her contention was that the various branches of internal medicine should be kept in touch with one another as is accomplished in North America by the American College of Physicians, and that this should be done on a truly international basis. Professor Swartz also emphasized the importance of purely personal and nonpolitical contacts among physicians of different countries.

The objectives of the Society as stated in its Statutes are "to promote scientific knowledge in internal medicine, to further the education of the younger generation, and to encourage friendship among physicians of all countries." The members are "specialists in internal diseases, acknowledged as such and accepted by the appropriate national societies of internal medicine."

The first president of the International Society was Professor A. Gigon of Basel, Switzerland. He was succeeded, in 1952, by Dr. Swartz and she by Sir Russell Brain of London, the President of the Royal College of Physicians.

The Fifth Congress of the International Society of Internal Medicine will take place at the new Sheraton Hotel in Philadelphia on April 24 to 26, 1958. This will be the first meeting of the Society outside Europe. The previous Congresses, at two-year intervals, were held in Paris, London, Stockholm, and Madrid. At those meetings, however, the United States,

as well as many other nations throughout the world, was represented. The present membership of the Society, including forty-eight nations, is about 3000.

At the Philadelphia Congress, it is planned to analyze through lectures and panels medical achievements of worldwide significance, to evaluate certain apparent problems and to chart courses of action designed to enhance technical knowledge and to aid in the continuing war against disease. At the same time, the plan includes such social and cultural activities as will tend to promote cooperation, friendship, and mutual understanding among physicians and peace among their countries.

All Medical Corps officers who are internists are invited to become members of this Society. You may become a permanent member or a member for the coming Congress only. The dues are only \$5 for every two years. For further information and application blanks write to:

International Society of Internal Medicine
Office of the Secretary General
4200 Pine Street
Philadelphia, Pa.

(ProfDiv, BuMed)

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Course in Nuclear Medicine

A course in the Clinical Application of Radioisotopes will be offered at the U. S. Naval Medical School, National Naval Medical Center, Bethesda, Md., in September 1957, and again in early January 1958. This will be full time formal type training by the staff of the Radioisotope Laboratory, U. S. Naval Hospital and the Radioisotope School, U. S. Naval Medical School.

Approximately twenty guest lectures by recognized authorities in the field of Nuclear Medicine will supplement the staff teaching program. Field trips to nearby civilian and government medical centers are planned, including Atomic Energy Commission facilities.

The course is 15 weeks in length. It is designed to fulfill isotope requirements of all specialty boards as well as to qualify the participants for licensure by the U. S. Atomic Energy Commission for the Clinical Application of Radioisotopes. Applications from Medical officers in all major specialties are desired. At least 12 months of approved residency training in a specialty is required. Temporary additional duty orders with per diem, if applicable, will be issued to accepted applicants.

Applications may be made to Chief, Bureau of Medicine and Surgery, Code 316, Navy Department, Washington 25, D. C. (NavMedSchool)

From the Note Book

1. Rear Admiral B. W. Hogan, Surgeon General of the Navy, presented a paper on Mental Health at the Second General Session of the 53rd Annual Health Conference held at Albany, N. Y., 23 - 27 June 1957. (TIO, BuMed)
2. The Surgeon General of the Navy and Chief of the Bureau of Medicine and Surgery has established a Navy Medical Department Food Service Council. The Food Service Council will assist and advise the Chief of the Bureau of Medicine and Surgery in matters pertaining to food service functions in naval hospitals. It shall explore on a continuing basis all aspects of naval hospital food service in order to identify areas amenable to improvement. It shall further study and evaluate such areas with the purpose of devising means by which improvement can be effected. It shall keep abreast of new equipment and techniques, maintaining continued contact with all sources of such information.

The Council consists of CDR Leslie E. Bond MSC USN, Chairman, and LCDR Lucille R. Clark MSC USN, Dietician, U. S. Naval Hospital, San Diego, Calif.; LT Ezra F. Ferris MSC USN, U. S. Naval Hospital, Pensacola, Fla.; LT Albert D. Warner MSC USN, U. S. Naval Hospital, Great Lakes, Ill., and LT Dwight J. Adams MSC USN, U. S. Naval School Hospital Administration, National Naval Medical Center, Bethesda, Md. (TIO, BuMed)
3. The Bureau of Medicine and Surgery scientific exhibit from the Naval Hospital, St. Albans, N. Y., entitled Newer Approaches to Study of the Liver was awarded the Certificate of Merit at the recent American Medical Association meeting held at the Coliseum, New York City, June 3 - 7, 1957. (TIO, BuMed)
4. Certificates were awarded to twenty-four Navy Dental officers who completed the General Postgraduate Course at ceremonies at the U. S. Naval Dental School, National Naval Medical Center, Bethesda, Md., on June 28, 1957. Certificates were also awarded to four Navy Dental officers who have completed residencies. (TIO, BuMed)
5. Lantern slide sets have been completed and are now available on a loan basis from the Armed Forces Institute of Pathology: (a) Characteristic Lung Cavities (Radiology) with descriptive list consisting of 30 black and white 2" x 2" slides; (b) Correlative Cellular Morphology - Exfoliated Cytology (Vaginal, Cervical, and Tissue) advanced set with descriptive booklet consisting of 100 color 2" x 2" slides; (c) Surgical Pathology consisting of 162 color 2" x 2" slides. (Note: A complete listing of the available loan sets as well as a request form may be obtained upon written request.) (AFIP)

6. Additional reports of outbreaks of influenza have been received by the World Health Organization. These include reports from Thailand and Viet Nam. The extensive epidemic which was first reported in Hong Kong late in April was followed in rapid succession by reports from Malay, Taiwan (Formosa), the Philippines, Indonesia, Japan, and India. In Japan, the disease has spread to 32 prefectures.

Illness clinically resembling influenza has been reported among passengers and crews of several ships enroute from the Far East to ports in the United States. Generally, these outbreaks on ships have affected about 10 to 15% of persons aboard; and the outbreaks have about run their course by the time the ships docked in ports on the west coast. Passengers also are arriving in large numbers by airplane. Both airplane and ship passengers from the Far East are being warned of the possibility of developing influenza following their entrance into the United States and are being advised to consult their own physicians should illness develop. As yet no virus isolations or positive serologic tests on civilians or military personnel after arriving from Asia have been reported, nor has any influenza-like illness been reported in persons having contact with such arrivals. (Weekly Report, Morbidity and Mortality, June 14, 1957, PHS, HEW)

7. The Surgeon General of the Public Health Service has established an advisory committee of physicians and health officers to consider precautionary steps in the United States against the current influenza epidemic in the Far East. Epidemics in the Far East have been caused by a new strain of influenza virus which apparently is not controlled by current influenza vaccine. Much of the influenza caused by the new virus has been relatively mild, marked by a 3- or 4-day period of fever and other typical flu symptoms. (PHS, HEW)

8. The first issue of an abstract periodical, Cardiovascular Diseases, has been announced by the Public Health Service and the Excerpta Medica Foundation. The new journal will provide a means through which scientists interested in heart research can keep abreast of the literature—now a difficult task because of the increasing number of scientific publications in this field. Leading cardiologists and scientists serve on the Advisory Board of the publication and recommend type of coverage and the journals to be abstracted. The Board, appointed by the Excerpta Medica Foundation, will have approximately 40 members, nine from the United States. (PHS, HEW)

9. The Journal of the American Medical Association, Vol. 164, No. 6, dated 8 June 1957, contains an excellent article on the current status of therapy for congestive heart failure by Dr. C. F. Kay. This is recommended reading for all Medical officers. (Editor)

10. Obstructive lesions of the urinary tract in children are common. Three types are encountered: congenital prostatic valves, congenital hypertrophy of the verumontanum and, most commonly, congenital hypertrophy of the internal sphincteric orifice. (J. Urol., May 1957; E. Burns, E.H. Ray, Jr., J.W. Morgan.)
11. Familial dysautonomia is a clinical entity which manifests itself during the first months of life. The most significant roentgenologic changes occur in the lungs and the radiologist should include dysautonomia among the causes of chronic infantile and juvenile pneumonias. Retarded skeletal maturation and scoliosis may be present. The heart, upper gastrointestinal tract and central nervous system are usually normal roentgenographically. (Radiology, May 1957; R.H. Kirkpatrick, M.D., C.M. Riley, M.D.)
12. Blood samples were collected from approximately 150 American Indians from the plains states and from another 100 Indians originating in the Southeastern U.S. Only three cases of sickle-cell trait were found. It is thought that these cases of sickle-cell trait are probably attributable to miscegenation with the American Negro. (J. Lab. & Clin. Med., June 1957; F. Stohlman Jr., M.D., G. Brecher, M.D.)
13. This article classifies the presently used ataraxic drugs on a chemical structure basis and briefly describes their pharmacologic actions and therapeutic implications so far as they are known. (Anesthesiology, May-June, 1957; M.I. Gold, M.D., H.H. Stone, M.D.)
14. A review of the methods used for the application of cervical traction in the treatment of spine and spinal cord injuries and the treatment of complications appears in Surg. Gynec & Obst., June 1957; R.C. Schneider, M.D.
15. A follow-up study of 294 patients with duodenal ulcer treated by vagotomy and removal of the gastric antrum is presented in Ann. Surg., May 1957; L.W. Edwards, M.D., et al.
16. The management of tuberculous empyema is discussed in Dis. Chest, June 1957; J D Murphy, M.D.
17. The immediate mortality and the clinical and physiologic responses of 287 patients operated on for aortic stenosis by the transventricular and transaortic techniques are reviewed in Arch. Int. Med., June 1957; C.P. Bailey, M.D., W. Likoff, M.D.
18. A clinical study of anticoagulants in acute myocardial infarction with particular reference to early heparin therapy appears in Am. J. Med. Sci., June 1957; G.L. Eastman, M.D., et al.

Recent Research ReportsNaval Dental Research Facility, NTC, Bainbridge, Md.

1. Hyaluronidase Activity of Saliva - Relationship to Dental Caries Susceptibility. NM 008 027.01, 20 April 1957.
2. Metabolic Significance of Collagen in Tooth Structure. NM 008 027.01, 1 May 1957.

Naval Medical Research Unit No. 3, Cairo, Egypt

1. Exploratory Study Designed to Suggest Clusters of Traits and Assessment Tests Related to Submariner Adjustment. Report No. 279, NM 003 041.54.03, 9 January 1957.
2. Limited Operational Evaluation of Dehydrofrozen Peas and Carrots. Memorandum Report No. 57 1 24 01 20, (Subtask 5.1), 15 May 1957.

Naval School of Aviation Medicine, NAS, Pensacola, Fla.

1. Ocular Pursuit of a Target Moving in an Apparent Circular Path. NM 001 110 102, 4 September 1956.
2. The Intra-Target Dosage Field for Thin-Down Hits in Spherical Specimens of Tissue Composition. V. NM 001 101 100, 6 December 1956.
3. Effects of Disrupting the Simultaneity of Visual-Aural Communication Channels to a Speaker. Subtask 1, Report 66, NM 18 02 99, 20 December 1956.
4. Rate and Magnitude of Explosive Decompression Required to Produce Lethal Effects in Albino Rats. Subtask 5, Report No. 3, NM 12 01 11, 31 January 1957.
5. Rating Scale Technique for the Measurement of Speaker Intelligibility. Subtask 1, Report No. 68, NM 18 02 99, 8 February 1957.
6. Nystagmus Elicited by High Intensity Sound. NM 13 01 99, 15 February '57.
7. Pitch Ratings of Voiced and Whispered Vowels. Subtask 1, Report No. 67, NM 18 02 99, 28 February 1957.
8. Dynamics of the Circulation in Acute Hypertension Produced by Stimulation of the Cerebral Cortex. Subtask 2, Report No. 12, NM 18 01 99, 1 March 1957.

(Concluded from News Letter of 21 June 1957)

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Policy

The U.S. Navy Medical News Letter, is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items

of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor are they susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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BUMED INSTRUCTION 6700.21

4 June 1957

From: Chief, Bureau of Medicine and Surgery
To: Distribution List

Subj: Defense Standardization Program, Standardization Responsibility for FSC Group 65 - Medical, Dental, and Veterinary Equipment and Supplies, and FSC Class 8125 - Bottles and Jars

Ref: (a) Military Manual for Standardization, M201
(b) DOD Directive 5160.23 of 23 Mar 1957, Subj: Armed Services Medical Materiel Coordination Committee
(c) ONM ltr M72C/WEA:mg of 18 Jan 1957

This instruction sets forth the responsibility of the Bureau of Medicine and Surgery in the subject standardization program and advises addressees of the functions and actions involved in the standardization program which are hereby redelegated to the Military Medical Supply Agency and the Armed Services Medical Materiel Coordination Committee, respectively.

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BUMED NOTICE 11110

4 June 1957

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals and National Naval Medical Center, Naval Dispensaries and Dental Clinics

Subj: Selection and maintenance of floors and floor coverings

Ref: (a) NavMed P-5040 (1956) - Recommended Safe Practice for Hospital Operating Rooms - National Fire Protection Association - NFPA No. 56 (encl (1) of BuMedInst 5100.1A)

This notice promulgates information on the selection and maintenance of floors and floor coverings with a view toward reduction of expenditures for upkeep and replacement.

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BUMED INSTRUCTION 6700.22

5 June 1957

From: Chief, Bureau of Medicine and Surgery

To: All Naval Hospitals; Activities having Station Hospitals;
Naval Dispensaries; Dental Clinics; Medical Research Laboratory;
Medical Research Units; Medical Field Research Laboratory; and
National Naval Medical Center

Subj: Medical and Dental Material Development Program

This instruction advises of subject program and disseminates instructions for submission of suggestions for new medical and dental items, and/or improvement of existing medical and dental material. Attention is invited to "The Development of Military Medical Equipment" in the Medical Technicians' Bulletin (Supplement to U. S. Armed Forces Medical Journal), Volume 8, No. 2 of March - April 1957.

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BUMED NOTICE 7330

7 June 1957

From: Chief, Bureau of Medicine and Surgery

To: All Naval Hospitals

Subj: CH-4 to BuMed Instruction 7330.1A, Subj: Ration Record,
NavMed-36 (Rev. 7-56)

Encl: (1) Replacement pages 1 and 2 and 7 through 11 of enclosure (1)
to BuMed Instruction 7330.1A

This notice promulgates a change in the computation of ration cost and inserts an "Attached" column for Section D of subject report.

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BUMED NOTICE 5101

13 June 1957

From: Chief, Bureau of Medicine and Surgery

To: All Ships and Stations Having Medical/Dental Personnel

Subj: Blanket, Bed, Cotton, White, FSN 7210-299-8724; electrostatic hazard in

This notice suspends use of subject item in anesthetizing locations and operating rooms until the hazardous binding has been removed.

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BUMED NOTICE 6700

13 June 1957

From: Chief, Bureau of Medicine and Surgery

To: All Ships and Stations Having Medical/Dental Officers Attached

Subj: FSN 6515-301-0400, Anesthesia Apparatus, Gas, Nitrous Oxide, Oxygen and Ether, 4 Cylinder Capacity, and FSN 6515-301-0430, Anesthesia Apparatus, Gas, Nitrous Oxide, Oxygen and Ether, Portable, 4 Cylinder Capacity, manufactured by McKesson Appliance Company

Ref: (a) Art. 21-121 ManMed

The purpose of this notice is to determine the condition and the quantity of the subject-named items now in use or in stock (except elements of the wholesale and retail distribution system).

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BUMED INSTRUCTION 6710.42

13 June 1957

From: Chief, Bureau of Medicine and Surgery

To: All Ships and Stations having Medical/Dental Personnel

Subj: FSN 6505-237-8469, Typhoid and Paratyphoid Vaccine, USP 50cc, Lot No. E7454, manufactured by Cutter Laboratories; authority for disposition of

Ref: (a) Art. 25-21 ManMed

This instruction provides authority for disposal of subject material. Stocks of subject material on hand shall be surveyed and destroyed in accordance with the provisions of reference (a) citing this instruction as authority.

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BUMED NOTICE 6700

14 June 1957

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical/Dental Personnel
Subj: Light, Bed, Universal Clamp FSN 6230-706-0575

This notice acquaints addressees with serious defects discovered in subject items.

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BUMED INSTRUCTION 6700.13A

19 June 1957

From: Chief, Bureau of Medicine and Surgery
To: Distribution List
Subj: Initial outfitting lists of medical and dental material for naval vessels
Ref: (a) BuMed Inst 6700.14A
(b) Latest Edition of Initial Outfitting List Applicable to Individual Addressee (Commissioned Naval Vessels)

This instruction promulgates certain logistics policies and definitions regarding the use of medical and dental initial outfitting lists. BuMed Instruction 6700.13 of 1 February 1954 is canceled.

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DENTAL**SECTION**

Dental Student (Ensign 1995) Program

The Dental Student (Ensign 1995) Program was established to provide an opportunity for Navy minded dental students to be appointed as Reserve officers in the grade of Ensign (Dental) for inactive duty while pursuing their professional studies. As ensigns, they are entitled to all the privileges commensurate with their rank and classification.

Among the benefits of participation in this program is legal deferment from military service as long as the individual remains in good standing in dental school or until graduation. The period of active duty required by Selective Service is performed later as a Dental officer in the Navy. The obligated service is performed by the officer immediately upon graduation instead of his being subject to induction at an indefinite date with consequent interruption of his private practice.

Upon graduation from dental school, appointees under this program are obligated to accept superseding appointments as offered in the grade of Lieutenant (Junior Grade) in the Dental Corps of the Naval Reserve. They are required to serve on active duty for a period of two years following acceptance of superseding appointments unless their active duty obligation has already been discharged. They must remain in a commissioned status in the Naval Reserve for a period of six years following acceptance of their superseding appointment.

As the number of Regular Navy Dental officers increases and if the number of active duty billets remains constant, the vacancies in this program are reduced. Due to the great popularity of the program among dental students, it has become necessary to establish a strict quota on a geographical basis for each class entering dental school. This permits a good geographical distribution of participants as well as assuring that estimated needs of the service will not be exceeded. The quota for the dental class scheduled to be graduated during calendar year 1961 has been established as 220. This compares with 477 participants who were graduated during the calendar year 1956.

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Board Certification

Captain Allan L. Wallace DC USN was certified recently as a Diplomate of the American Board of Periodontology. Captain Wallace is on duty at the U. S. Naval Dental Clinic, Pearl Harbor, T.H.

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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RESERVE SECTION

Benefits Available Through Senior Medical Student Program

Medical students commissioned as Ensign 1995 USNR who have reported for active duty in the Navy's Senior Medical Student Program are eligible for necessary medical/dental treatment and hospitalization at any Navy, Army, Air Force, Public Health Service or Veterans Administration Hospital. Also, any such medical student who is on duty in an area where there are no federal medical or dental facilities is eligible for necessary emergency medical and dental treatment from a civilian physician, dentist or hospital. In cases where treatment is to be obtained from civilian sources, the Commandant of the respective Naval District where the medical student's records are maintained must be promptly notified so that proper authorization and payment for such services can be obtained.

In addition, dependents of the enrollees in the Senior Medical Student Program are eligible for both outpatient and inpatient medical care at medical facilities of the Army, Navy, Air Force or Public Health Service where such treatment is provided for and is available. Under the Dependents' Medical Care Act, the wives and dependent children of senior medical students serving on active duty are also eligible for authorized medical care in civilian hospitals at government expense. Except for maternity care or treatments for certain injuries, civilian outpatient care is not authorized for dependents of Senior Medical Students on active duty.

Senior Medical Students with dependents eligible for medical care in accordance with the above should obtain through their respective District Commandant a "Uniformed Services Identification and Privilege Card (DD Form 1173)". When dependents apply for authorized medical care, either in uniformed service medical facilities or civilian facilities, they must identify themselves as dependents eligible to receive treatment by means of this card.

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Naval Reserve Officer School Courses

Effective 1 July 1957, inactive Reserve Medical Department officers may enroll in and complete for promotion credit the following listed Naval Reserve Officer School Courses. Eligibility is determined as follows:

Medical Department officers of any rank and category for promotion to next higher rank:

<u>Course No.</u>	<u>Title</u>
<u>Executive Area</u>	
182	Military Justice
184	Public Relations
181	Personnel Administration
<u>Operations Area</u>	
201	Industrial Management
202	Industrial Relations
302	Logistics
<u>Technical Area</u>	
225	Guided Missile Orientation

Medical Department officers in the grades of Ensign, LTJG, or LT for promotion to next higher rank:

<u>Executive Area</u>	
183A	Education and Training
183B	Education and Training
180	Leadership
185	Security of Classified Matter
<u>Operations Area</u>	
230	Communications
<u>Technical Area</u>	
214	Naval Electronics

Medical Department officers in the grades of LTCDR and CDR for promotion to next higher rank:

<u>Course No.</u>	<u>Title</u>
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Executive Area

401	International Relations
402	International Law
301	Organization for National Security

Operations Area

207	Financial Management
410	Operational Planning
411	Strategy and Tactics

The above provisions are in accordance with BuPers Notice 1416 of 25 March 1957 which promulgates advance information on eligibility of inactive Reserve officers (by grade and category) for Naval Reserve Officer School Courses under a forthcoming revised plan of professional fitness for promotion.

Inactive Reserve Medical Department officers desiring information on enrollment in a Naval Reserve Officer School should write or visit the Reserve Medical Program Officer of their Naval District.

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Medical Department Correspondence Courses

Manual of the Medical Department, Part I, NavPers 10708-1
Manual of the Medical Department, Part II, NavPers 10709-1

The attention of interested personnel is invited to the fact that the MD Manual, Page Change Five, 18 January 1957, has been incorporated into these two courses. Page Changes 1 through 5 have been incorporated into the text which reflects the current position of the Medical Department on the subjects affected.

MD Manual, Part I, NavPers 10708-1 is based on Chapters 1 through 14 and Chapters 17, 18, 20, 21, and 22; Part II course is based on Chapters 15, 23, 24, 25, and Appendix A of MD Manual and Army Regulation 40-503. Part I course continues to be evaluated at 24 NR promotion and nondisability retirement points. Part II course is evaluated at 18 NR promotion and nondisability retirement points. NR personnel who have previously completed course NavPers 10708 or NavPers 10709 will not receive additional credit for completing this revised course.

Applications for these courses should be submitted on Form NavPers 992 (Rev. 2-56) with appropriate change in "To" line, and forwarded via official channels to Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md. (NavMedSchool, NNMC, Bethesda, Md.)

Medical Service in Joint Oversea Operations

The Medical Department correspondence course, Medical Service in Joint Oversea Operations, NavPers 10769, is now available for distribution to eligible Regular and Reserve officer and enlisted personnel of the Armed Forces. Applications for this course should be submitted on Form NavPers 992 (Rev 2-56) and forwarded via appropriate official channels to the Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md.

Modern warfare requires the closest cooperation of air, naval, and ground units to carry out successfully oversea operations against an enemy. Experience in amphibious and airborne operations in World War II clearly showed the need for careful coordination in both the planning and execution of operations in which units of more than one branch of the Armed Forces are involved.

Senior officers of the Navy Medical Department who are assigned to duty with a unified command must be familiar with the organization, doctrine, and practice of the medical services of the Army and Air Force.

The aim of this course is to inform Medical Department personnel how the military services pool human and material resources in an over all mission, how they work together under a unified commander, and how they adapt their individual procedures to work in harness with each other in a joint oversea operations.

The questions making up the two assignments of the course are based on problems arising from a hypothetical military operation. The operation is an amphibious assault on an imaginary place called Gannet Island, and the assault employs units from each branch of the Armed Services.

In the first assignment, the mission of the medical service is established and the organization of a joint command is explored. Questions also deal with the planning of the joint operation as a whole, and with the first phase of the operation which is an amphibious landing on the simulated target.

In the second assignment, questions cover the movement of Army and Marine ground forces in occupying Gannet Island, an airborne operation and the role of supporting Air Force and Navy units.

This course consists of two objective question type assignments and is evaluated at six (6) Naval Reserve promotion and nondisability retirement points. It is based upon the text Medical Service in Joint Oversea Operations, NavMed P-5047 (Tri-service Publication). (NavMedSchool, NNMC, Bethesda, Md.)

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The printing of this publication has been approved by the Director of the Bureau of the Eudget, 16 May 1955.



PREVENTIVE MEDICINE SECTION

Future of the Sanitary Control of Milk

At the Tenth Annual Meeting of the Dairy Products Improvement Institute, Walter D. Tiedeman, noted authority on milk sanitation, was invited to make predictions on the future of milk sanitary control. Some of his remarks are summarized:

Because it has become increasingly difficult to get government budget appropriations necessary to support the numerous dairy inspectors required to cover milk supplies, the alternative of requiring the milk industry to provide qualified service men whose work is subject to the approval of supervising inspectors has become a trend which is likely to continue. The next 50 years will bring less and less official dairy farm inspection with the shifting of this burden to industry. In all industries there is increasing emphasis on quality control with considerable expenditure to maintain a staff and laboratory for that purpose. It is hoped that the shift of responsibility will not take the form of regulations prescribing exactly what must be done in dairy farm inspections, but preferably, what must be accomplished from the standpoint of milk quality. There will be an increasing tendency for health officials to saddle the milk industry with responsibility for maintaining the safety and quality of public milk supplies. The public will look to the milk dealer for a warranty as to the quality and safety of his products. However, some well directed official control of milk sanitation will always be necessary.

In the future, dairy farm inspection may be modified materially by advances in equipment such as the pipeline milker, the farm storage tank, and farm pickups of milk by tank trucks. There is also the possibility for the development of more compact dairy farms of the Los Angeles type (consisting of a pen and feeding area and a milking parlor for 100 or more cows with growing of feed and breeding done elsewhere). The location of such farms on the outskirts of the city to be served simplifies the problem of official inspection because of the decreased numbers and convenient location of such farms. However, economics will probably govern this development rather than farm inspection requirements.

Anticipated increases in population density are sure to result in further overlapping of metropolitan milk sheds. This will lead progressively to consideration of the milk industry as a public utility. The establishment of Federal Marketing areas and more general adoption of regulations encouraging the interstate shipment of fluid cream and 3 to 1 concentrated fluid milk may accomplish the purpose of allocating limited supplies of milk without establishing milk as a public commodity. It is quite probable that control of population increase will precede the possibility of exhausting milk supply expansion.

Official control over packaging, distribution, and sale of milk will be subject to further change. Sometimes overlooked is the principle that if milk is safe for consumption in one community, it should be safe for other communities. The future trend will be toward fewer permits covering larger distribution areas. Development of the packaging of milk has come a long way. The old heavy, long-necked glass bottle has been replaced by bottles of much lighter weight and convenient shape removing emphasis from the cream line. The disposable paper container and the approved bulk milk dispenser have been accepted. In disposable containers, there is a trend from paraffin to plastic coatings. It is likely that coffee cream will be put up in single servings in the new Swedish tetrahedron paper container or in a plastic envelope with a built-in spout for pouring. Although becoming more and more meaningless, the old regulations requiring the placing of the date of pasteurization on the caps of bottle milk will likely remain in effect for the next half century.

A rather simple solution to the problem of milk sanitation in the future would be the production of synthetic milk. This would reduce official control to that required for food processing plants. Taking into consideration present substitutes for butter and cream, it would be audacious to say that milk will never be manufactured from organic constituents, but it can be safely predicted that synthetic milk will not be commercially feasible within the next century. Continued reliance must be placed upon pasteurization to make milk and milk products safe. The increased use of high temperature pasteurization will continue to develop gradually. This, together with the increased popularity of homogenized milk, serves to give a greater margin of safety in heat effect than is possible by the historic low temperature process.

There is no prospect that the treatment of milk by radiation will replace pasteurization. All attempts to sterilize milk by radiation have resulted in ruining the flavor and other physical properties in milk, due largely to the difficulty in destroying the enzymes. Research is being diverted toward the destruction of bacteria to an extent equivalent to pasteurization instead of sterilization. From the standpoint of economy, it is not likely that this process will replace pasteurization within the next half century.

Much progress has been made, but there is room for still greater progress in the laboratory control of milk supplies. The phosphatase test is doubtless here to stay. The advantages of the coliform test for the examination of pasteurized milk and milk products should not be overlooked. Properly pasteurized milk should not contain organisms of the coliform group. Some well regulated plants operate around the calendar without a positive coliform test. The field may anticipate a simpler test for coliforms which may be used with no more extensive equipment than a very small 35° C. incubator. The next half century should see the introduction of methods of sampling that will be more representative than the taking of a random quart from supplies totaling thousands of quarts daily. (Tiedeman, W. D., The Future of the Sanitary Control of Milk and Milk Products: Journal of Milk and Food Technology, 20:113-117, April 1957)

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Short Course in Shipboard Pest Control

The Medical News Letter, 29: 37-39, 18 January 1957, announced the results of a shipboard insect control survey conducted by Preventive Medicine Unit No. 6 at the request of Commander Service Force, U. S. Pacific Fleet. The principal recommendation of this survey was that consideration be given to the establishment of a standard short course in shipboard insect and rodent control at sufficient suitable locations to insure the availability of uniform training of this type to all ships of the Navy.

With the concurrence of the Chief of Naval Operations and the support of the Commanders in Chief, Pacific and Atlantic Fleets, a short course (one day) in shipboard pest control is now being regularly scheduled at the following activities:

U. S. Navy Preventive Medicine Unit No. 2
Naval Base
Norfolk, Va.

U. S. Navy Preventive Medicine Unit No. 5
Naval Hospital
San Diego, Calif.

U. S. Navy Preventive Medicine Unit No. 6
Pearl Harbor Naval Shipyard
Pearl Harbor, T. H.

U. S. Navy Preventive Medicine Unit No. 7
Naples, Italy

U. S. Navy Preventive Medicine Unit No. 8
U. S. Naval Hospital
Yokosuka, Japan

U. S. Navy Disease Vector Control Center
U. S. Naval Air Station
Jacksonville, Fla.

Vector Control Unit
U. S. Naval Air Station
Alameda, Calif.

Class schedules and quotas should be determined by reference to local instructions. Due to rotation of shipboard personnel and the constantly developing technology of pest control, personnel charged with responsibility for accomplishing this work aboard ships should attend the short course in shipboard pest control at least once annually. Accordingly, the cooperation of all appropriate fleet medical officers is requested to insure that appropriate personnel from each ship are scheduled annually for this training.

Because the destruction of foodstuffs and other products by pests continues to have important economic implications for the Navy, it is recommended that this course also be made available to appropriate shipboard Supply Department personnel.

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Measuring the Acoustic Attenuation of Ear Protective Devices

Noise bands compete with pure tones as stimuli in measuring the acoustic attenuation of ear protective devices. The sound-exclusion properties (acoustic attenuation) of various earphones and ear defenders and combinations thereof were determined by the binaural, free-field, absolute-threshold-shift technique with the psychophysical method of adjustment. The earphones included dynamic earphones in two different sockets and hearing-aid type receivers with individually molded inserts. The ear defenders included certain conventional and newly developed earplugs and muffs and a hard-shelled noise exclusion helmet.

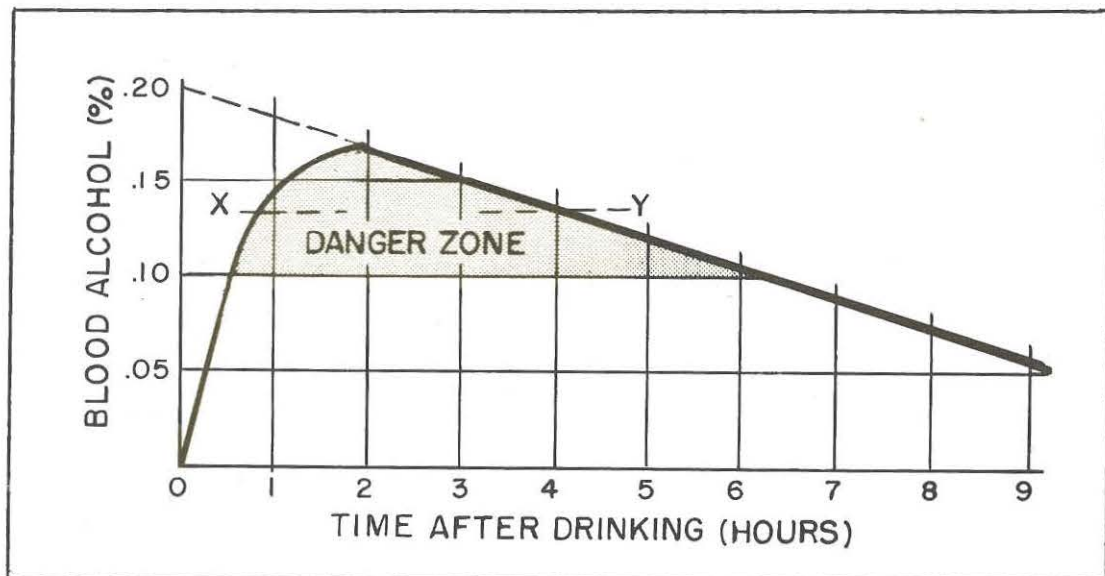
In a preliminary evaluation of a limited number of devices, both tones and noise bands were used as stimuli and comparative results are shown. In evaluating the effectiveness of some of the newer devices, noise bands alone were used. For the exclusion of external sound—particularly that below 1200 cps—the order of merit for earphone combinations was: (1) large volume muffs with insert phones; (2) helmet with insert phones;

(3) semiplastic sockets with dynamic phones; and (4) helmet with dynamic phones. (Industrial Hygiene Digest, 21: 22, April 1957; Webster, J. C., Thompson, P. O., Beitscher, H. R., Noise Bands Versus Pure Tones as Stimuli in Measuring the Acoustic Attenuation of Ear Protective Devices: J. Acoust. Soc. Am., 28: 631-638, July 1956)

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Why a Drunken Driver Can't Judge Himself

Any person who has a given concentration of alcohol in his blood will be at some definite stage of intoxication. This is essentially correct, says Dr. C. W. Muehlberger, noted toxicologist and director of the Michigan Crime Detection Laboratory, but in the view of the drinker himself it will appear grossly in error.



Suppose a man drinks 8 ounces of whiskey. During absorption, when his blood alcohol reaches 0.13% (X on the graph), he will feel much more intoxicated than he will three hours later (Y on the graph) when his blood alcohol has fallen to 0.13. His performance at these two points will be almost equally poor but, at X the drinker will be comparing himself to his previous state of sobriety, so he feels drunk. Three hours later, he will be comparing himself with the immediate past of maximum drunkenness and he will feel much more sober.

The graph also shows how much faster alcohol is absorbed than burned. For at least 6 hours after the start of drinking, this hypothetical tippler is a very dangerous driver. (Traffic Safety, 50: 11, June 1957)

Thiokol as a Frequent Cause of Dermatitis

The author reports 47 cases of dermatitis, 45 of which were due to artificial leather impregnated with thiokol and 2 with tiosol, a paint made of thiokol. Sweat bands were the cause in 39 cases, and pocketbooks, shoes, aprons, and multiple sources in the remaining cases. In both cases of dermatitis due to tiosol there was no direct contact with the painted materials; contact with the vapor was apparently responsible. The dermatitis was as a rule due to sensitization and thiokol is apparently to be considered as a relatively strong sensitizer. Patch tests indicated that thiokol was responsible in these cases. The protective measures adopted in Finland are described and various possibilities for prevention are discussed. (Industrial Hygiene Digest, 21: 13, March 1957; Pirila, V., Thiokol as a Frequent Cause of Dermatitis: Med. depor. y trab., 21: 332-337, October 1956.

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Caution in Use of Deep Fat Fryers

Analysis of a number of fires originating from operation of deep fat fryers which have recently occurred at various naval stations indicates that fryers frequently are either not of acceptable design, are inherently unsafe, are not receiving proper maintenance, or are not equipped with adequate operational safeguards.

Precautions. Operating precautions for deep fat fryers follow:

1. Operators should be thoroughly acquainted with proper procedures and operating instructions should be posted near units.
2. Do not operate fryers if smoke emission becomes heavy.
3. Keep hoods and ventilation ducts free of grease accumulations.
4. Thermostats should be checked periodically by qualified electricians. Units with defective thermostats should be secured until necessary repairs have been made.

5. The variable thermostat normally provided should be an Underwriters' Laboratories approved thermostat installed to limit maximum temperature to 425° F.

6. A second Underwriters' Laboratories approved thermostat should be installed to limit maximum temperature to 450° F. in case of failure of the first thermostat. In lieu thereof, a fusible type electrical cutout is acceptable.

7. In general, gas-fired fryers are inherently more hazardous than electric units. For this reason, along with many others, all deep fat fryers should be approved by Underwriters' Laboratories or Factory Mutual Laboratories. (BuDocks Technical Digest, No. 76, 8 May 1957)

(Medical officers should encourage compliance with BuDocks Instruction 11320.7 CH 5 which requires that commands conduct inspections of each of the subject installations under its jurisdiction. Action should be initiated promptly to eliminate any departures from the requirements enumerated above.)

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Vaccination of Naval Civilian Employees
Against Poliomyelitis

Policy guidelines for vaccinating Naval civilian employees against poliomyelitis are set forth in a joint Office of Industrial Relations and Bureau of Medicine and Surgery Notice 6230 of 2 April 1957. In addition, it is recommended that priority be given to those under 20 years of age and pregnant women until vaccine supplies become adequate for including those in the 20 to 40 year age group.

Naval civilian employees should be urged to seek immediate vaccination for all members of their families who are under 20 years of age or who are pregnant.

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POSTAGE AND FEES PAID
NAVY DEPARTMENT

DEPARTMENT OF THE NAVY
U. S. NAVAL MEDICAL SCHOOL
NATIONAL NAVAL MEDICAL CENTER
BETHESDA 14, MARYLAND

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